CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory
An ISO 9001:2008 Certified Company
NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/AHR/W.No.08/CSR-12/829f/CEMENT/2018-19 Date: 17.12.2018

TEST REPORT ON CEMENT

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. A. Hemadri Reddy** No.07, Hebbal Kempapura, 4th Cross Road, Gopalappa Layout, Bangalore - 560 092.
*** Name of Work**	:	Construction and improvements of culverts in Ward No.08, Kodigehalli, BBMP, Bangalore.
*** Reference**	:	Job Code: 008-18-000070
*** Sample ID**	:	Cement
Sample Received on	:	15.12.218
Period of Testing	:	15.12.2018 to 17.12.2018

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	27.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	380 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

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Job No.: CTCE/BBMP/AHR/W.No.08/CSR-12/829f/SAND-Gradation/2018-19 17.12.2018

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. A. Hemadri Reddy** No.07, Hebbal Kempapura, 4th Cross Road, Gopalappa Layout, Bangalore - 560 092.
*** Name of Work**	:	Construction and improvements of culverts in Ward No.08, Kodigehalli, BBMP, Bangalore.
*** Reference**	:	Job Code: 008-18-000070
*** Sample ID**	:	Fine Aggregates (M - Sand)
Technical Reference	:	IS : 2386 (Part 1) - 1963 (RA-2007)
Sample Received On	:	15.12.2018
Date of Testing	:	17.12.2018

Total Wt. of Aggregates in gms = **1000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	99.00	90-100	90-100	90-100	95-100
2.36	86.80	60-95	75-100	85-100	95-100
1.18	65.80	30-70	55-90	75-100	90-100
600 Micron	45.90	15-34	35-59	60-79	80-100
300 Micron	15.70	5-20	8-30	12-40	15-50
150 Micron	5.50	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-II specific limits.

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Note 1 :

For crushed stone sands, the permissible limit on 150-micron IS Sieve is increased to 20 percent. This does not affect the 5 percent allowance permitted in 4.3 of IS 383 applying to other sieve sizes.

Note 2 :

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Job No.: CTCE/BBMP/AHR/W.No.08/CSR-12/829f/AGG/GR/2018-19 17.12.2018

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. A. Hemadri Reddy** No.07, Hebbal Kempapura, 4th Cross Road, Gopalappa Layout, Bangalore - 560 092.
*** Name of Work**	:	Construction and improvements of culverts in Ward No.08, Kodigehalli, BBMP, Bangalore.
*** Reference**	:	Job Code: 008-18-000070
*** Sample ID**	:	Coarse Aggregates (40mm)
Technical Reference	:	IS : 2386 (Part 1) -1963 (RA-2011)
Sample Received on	:	15.12.2018
Date of Testing	:	17.12.2018

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	97.40	95-100	85-100
20	39.20	30-70	0-20
10	14.74	10-35	0-5
4.75	1.48	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under graded specific limits.

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TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. A. Hemadri Reddy** No.07, Hebbal Kempapura, 4th Cross Road, Gopalappa Layout, Bangalore - 560 092.
*** Name of Work**	:	Construction and improvements of culverts in Ward No.08, Kodigehalli, BBMP, Bangalore.
*** Reference**		Job Code: 008-18-000070
*** Sample ID**	:	Coarse Aggregates (20mm)
Technical Reference	:	IS : 2386 (Part 1) -1963(RA-2011)
Sample Received on	:	15.12.2018
Date of Testing	:	17.12.2018

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS :383-1970 (RA- 2011)	
		Graded	Single Sized
40	100	100	100
20	97.40	95-100	85-100
10	37.60	25-55	0-20
4.75	6.38	0-10	0-5

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits

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Job No.: CTCE/BBMP/AHR/W.No.08/CSR-12/829f/Cube/2018-19 08.02.2019

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. A. Hemadri Reddy** No.07, Hebbal Kempapura, 4th Cross Road, Gopalappa Layout, Bangalore - 560 092.
*** Name of the work**	:	Construction and improvements of culverts in Ward No.08, Kodigehalli, BBMP, Bangalore.
*** Reference**	:	Job Code: 008-18-000070
*** Sample ID**	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{15}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	08.02.2019

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	11.01.2019	08.02.2019	8.127	395.6	17.58
2	11.01.2019	08.02.2019	8.269	401.3	17.84
3	11.01.2019	08.02.2019	8.339	413.2	18.36

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. A. Hemadri Reddy** No.07, Hebbal Kempapura, 4th Cross Road, Gopalappa Layout, Bangalore - 560 092.
*** Name of the work**	:	Construction and improvements of culverts in Ward No.08, Kodigehalli, BBMP, Bangalore.
*** Reference**	:	Job Code: 008-18-000070
*** Sample ID**	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{15}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	08.02.2019

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	11.01.2019	08.02.2019	8.398	385.9	17.15
2	11.01.2019	08.02.2019	8.405	395.4	17.57
3	11.01.2019	08.02.2019	8.225	406.8	18.08

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*** Sample ID**	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{15}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	08.02.2019

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	11.01.2019	08.02.2019	8.099	366.5	16.29
2	11.01.2019	08.02.2019	8.178	373.9	16.62
3	11.01.2019	08.02.2019	8.247	384.5	17.09

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*** Reference**	:	Job Code: 008-18-000070
*** Sample ID**	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{15}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	08.02.2019

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	11.01.2019	08.02.2019	8.117	402.5	17.89
2	11.01.2019	08.02.2019	8.200	415.6	18.47
3	11.01.2019	08.02.2019	8.380	402.3	17.88

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Job No.: CTCE/BBMP/AHR/W.No.08/CSR-12/829f/Precast slab/2018-19 20.01.2019

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CORE

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. A. Hemadri Reddy** No.07, Hebbal Kempapura, 4th Cross Road, Gopalappa Layout, Bangalore - 560 092.
*** Name of work**	:	Construction and improvements of culverts in Ward No.08, Kodigehalli, BBMP, Bangalore.
*** Reference**	:	Job Code: 008-18-000070
*** Sample ID**	:	Precast slab (250mm thick)
*** Grade of Concrete**	:	M_{20}
Techinical Reference	:	IS:516-1959 (RA- 2013), SP-24:1983.
Sample Received on	:	18.01.2019
Date of Testing	:	20.01.2019

Sl. No	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	79.00	0.390	2514.25	1.58	0.955	30.25	15.41	16.64	17.43	21.79
2	50.00	80.00	0.398	2533.75	1.60	0.957	33.95	17.29	18.67	17.87	22.33
3	50.00	81.00	0.410	2577.92	1.62	0.959	33.60	17.11	18.48	17.72	22.15

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